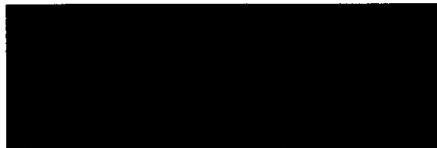




**SHORT RANGE COMMUNICATION
AND
RECORDING EQUIPMENT
(SHORACRE)
RADIO STATION UK/PSC-540**

BY COMMAND OF THE DEFENCE COUNCIL



Ministry of Defence

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AMENDMENT RECORD

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RELATED PUBLICATIONS

1 The Radio Station UK/PSC 540 (Shoracre) Equipment Octad consists of the publications shown in table. All references are prefixed 5820-F-300-

Category Sub-category	1 0	2 0	3 0	4 1	4 2	5 1	5 2	5 3	5 4	6 0	7 1	8 1	8 2
User Information Level 1	101	201	201	*	*	201	201	*	*	201	711	*	*
Unit Maintenance Level 2	*	*	302	*	*	512	522	*	*	*	713	*	*
Field Maintenance Level 3	*	*	303	*	*	513	523	*	*	*	713	*	*
Base Maintenance Level 4	*	*	*	*	*	*	*	*	*	*	*	*	*

* = Not published

- Cat 1 - Purpose and Planning Information
- Cat 2 - Operating Information
- Cat 3 - Technical Description
- Cat 4.1 - Installation Instructions
- Cat 4.2 - Preparation for Special Environments
- Cat 5.1 - Fault Diagnosis
- Cat 5.2 - Repair Instructions
- Cat 5.3 - Inspection Standards
- Cat 5.4 - Calibration Procedures
- Cat 6 - Maintenance Schedules
- Cat 7 - Parts Catalogue and Related Information
- Cat 8.1 - Modification Instructions
- Cat 8.2 - General Instructions

2 Associated Publications

Complete Equipment Schedule No 44969 for Radio Station UK/PSC 540 (Shoracre)

Complete Equipment Schedule No 44968 for Installation Kit, Electronic Equipment, for Radio Station UK/PSC 540 (Shoracre)

Complete Equipment Schedule No 43764 for Kit Mast Fibreglass 5.4m NSN 5820-99-621-9027.

EMERs for Clansman Audio Accessories, Telecommunications No C740 for Handset Remote Control (NSN 5965-99-620-5670), Headset microphone 'B' vehicle (NSN 5965-99-620-8320), Cable Assembly Switch Electrical (NSN 5965-99-620-5667) and Handset general purpose (NSN 5965-99-620-5669).

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PURPOSE AND PLANNING INFORMATION

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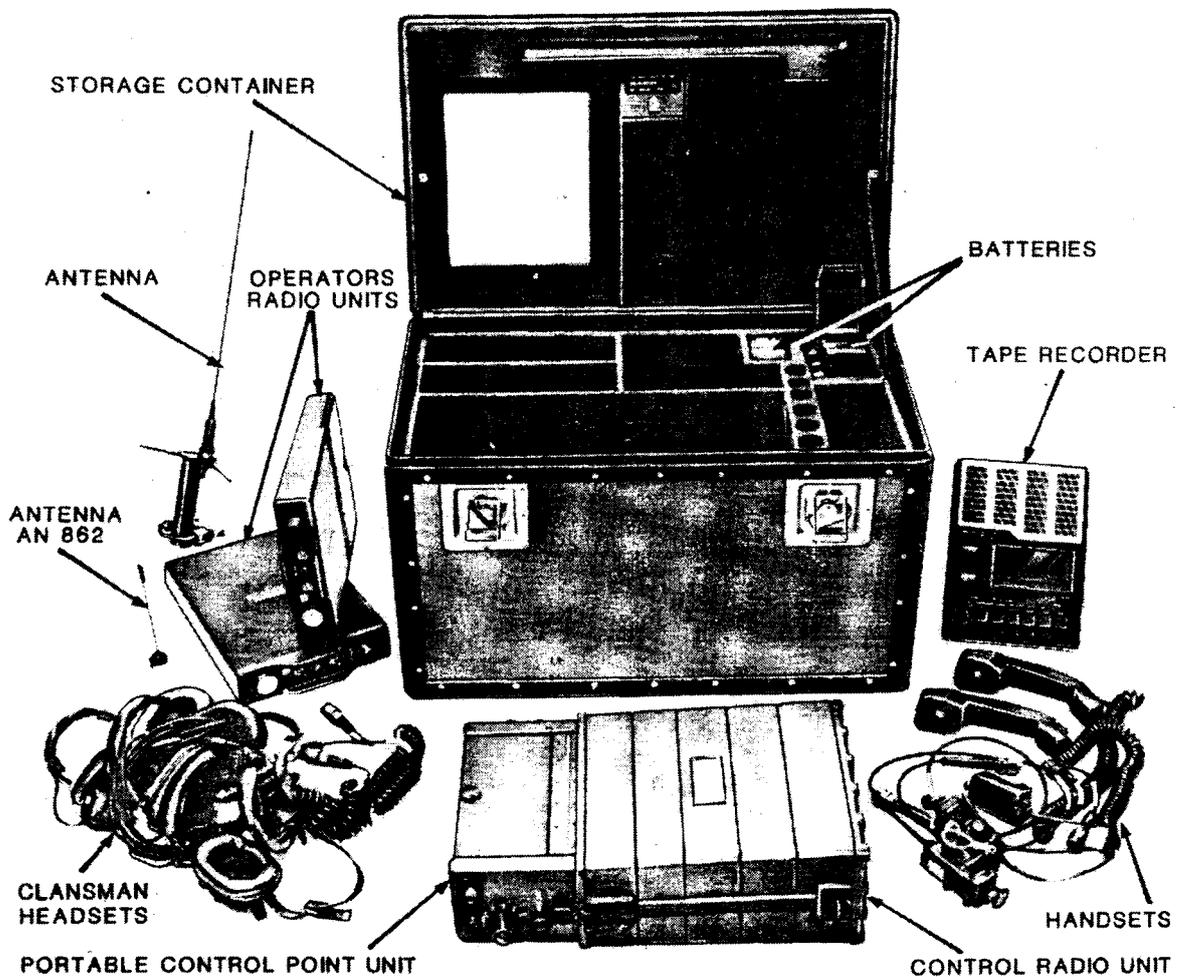


Fig 1 Main items of equipment

EQUIPMENT IDENTITY

1 Short Range Communication and Recording Equipment JK/PSC 540 (Shoracre)
NATO Stock No Z1/5820-99-966-0615. (See Fig 1)

ROLE OR PURPOSE

2 The purpose of the Shoracre equipment is to provide two-way speech between the Explosive Ordnance Disposal (EOD) teams and their Incident Control Point. The latter can be either man-portable in the General Purpose role (see Fig 2) or fitted into a vehicle for the Vehicle Installation role (see Fig 3) and is provided with the facility for recording all net conversations. In the General Purpose role the team comprises Search Operators 1 and 2 working with an Incident Controller, whereas in the Vehicle Installation role there is a Disposal Operator (DO) and a Stand Off Observer (SOO) both working with a controller.

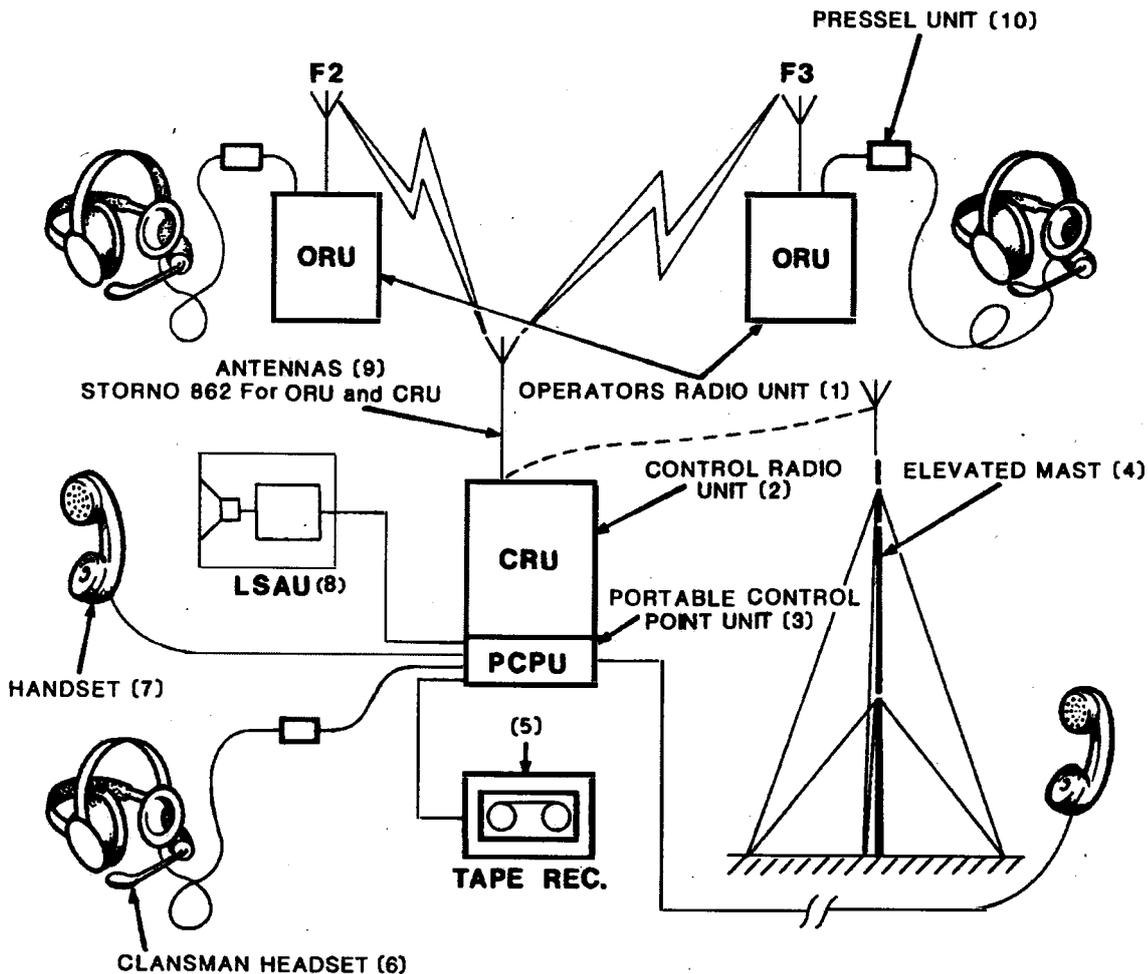


Fig 2 General purpose role

BRIEF DESCRIPTION

3 The Shoracre equipment is made up from the following items:-

3.1 Operator's Radio Unit (ORU) Qty 2. The ORU comprises a receiver element, a transmitter element and a 12V battery, all contained in a plastic case which is protected by a satchel. One of these units is

supplied to each searcher (General Purpose role) or to the DO and SOO (Vehicle Installation role) and provides the means of their communication with the relevant controller.

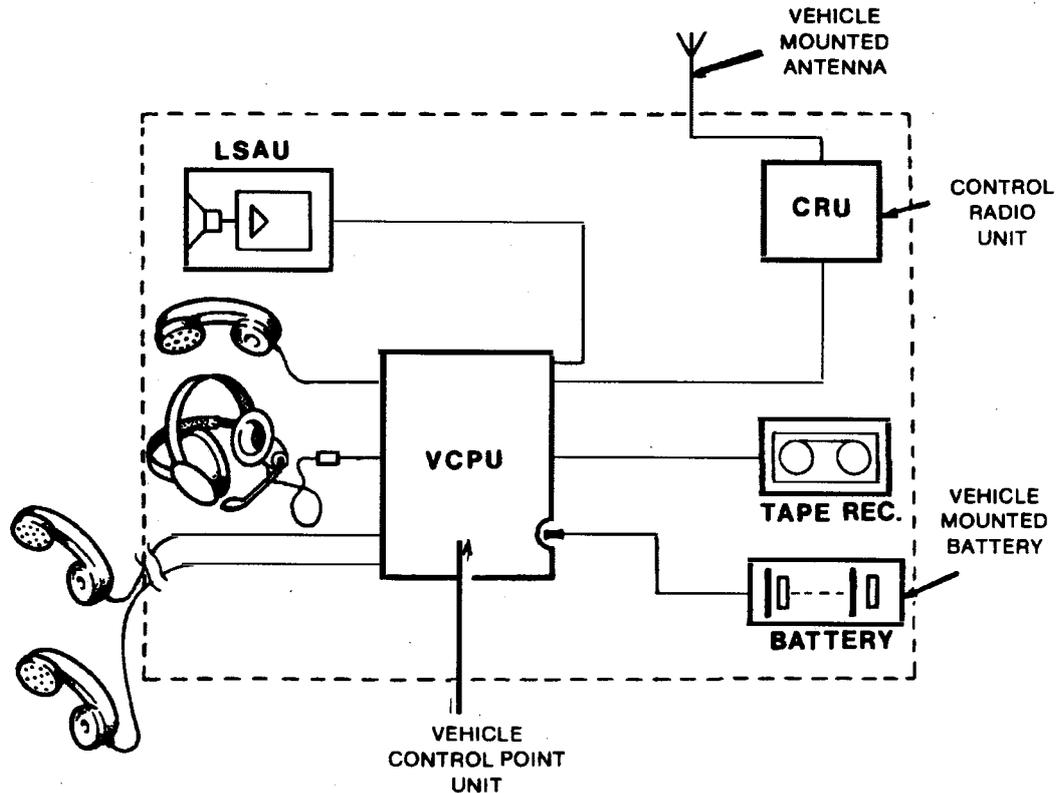


Fig 3 Vehicle installation role

3.2 Shoracre Pressel Unit Qty 2. The Shoracre Pressel Unit links the right hand earpiece of the Clansman headset or EOD helmet, to the CRU, and provides control facilities for Duplex or press to talk (PTT) modes, including earpiece volume control. A split pin is used to retain the three position switch in the "up" position for Duplex mode (DO only), the two other positions being 'PTT' and 'OFF' with spring bias back to 'OFF', (other operators).

3.3 Control Radio Unit (CRU) Qty 1. The CRU comprises one transmitter element and two receiver elements. This unit provides the means of communication between the controller and searchers or DO/SOO. The CRU is an essential link in the network.

3.4 Portable Control Point Unit (PCPU) Qty 1. The PCPU is used in the General Purpose role and interfaces with the CRU, both being strapped together and contained in a man-portable satchel. This unit contains the battery supply for the CRU and permits the connection of the Incident Controller's headset or handset, the Loudspeaker Amplifier Unit, the Tape Recorder, and a remote handset, to the CRU.

3.5 Vehicle Control Point Unit (VCPU) Qty 1. The VCPU is used in the Vehicle Installation role, is located in the vehicle, and provides all the facilities of the PCPU, but takes its supply from the vehicle battery. In the vehicle installation, the CRU is normally mounted adjacent to the VCPU, but to obtain increased range it may be removed to a convenient site and

connected to the VCPU by means of D10 lines. The VCPU requires a nominal 12V DC supply, and earth can be of either polarity.

3.6 Cassette Tape Recorder Qty 1. The Cassette Tape Recorder can be used in either role and is plugged in to either the PCPU for General Purpose activity or to the VCPU when the Vehicle Installation is used. Power is supplied from internal batteries in the General Purpose role, but in the Vehicle Installation role the recorder receives its power from the vehicle supply via the VCPU.

3.7 Antenna AN862 Qty 4. This antenna is a 1/4 wavelength whip type used with the CRU in the General Purpose role and all ORU's.

3.8 Vehicle Antenna. This Antenna takes the place of the Antenna AN862 when the CRU is vehicle mounted.

3.9 Remote Antenna. The remote Antenna is mast mounted and takes the place of the Antenna AN862 on the CRU when increased range is required or under conditions of difficult communications. Under these circumstances, the adverse effect on portability must be accepted.

3.10 Loudspeaker Amplifier Unit (LSAU). The LSAU comprises an audio amplifier and loudspeaker unit and provides amplification of all audio signals at the Incident Control Point. Power for the LSAU is derived from its own internal batteries in the General Purpose role and from the vehicle supply when connected to the VCPU in the Vehicle Installation role. Facilities are provided to remote the LSAU via D10 cable but in this case internal batteries must be used.

3.11 Clansman Pressel Unit. The Clansman Pressel Unit links the Incident Controller's headset to the PCPU or VCPU and provides connection to both earpieces, the volume being controlled from the PCPU or VCPU. It also provides the press to talk facility with LSAU muting.

ASSOCIATED PUBLICATIONS

4 Complete Equipment Schedules & EMERs.

4.1 Complete Equipment Schedule No 44969 for Radio Station UK/PSC 540 (Shoracre)

4.2 Complete Equipment Schedule No 44968 for Installation Kit, Electronic Equipment, for Radio Station UK/PSC 540 (Shoracre)

4.3 Complete Equipment Schedule No 43764 for Kit, Mast, Fibreglass 5.4m NSN. 5820-99-621-9027

4.4 EME Regulations for Clansman Audio Accessories Telecommunications No C740

PHYSICAL DATA

5 General. The Shoracre System General Purpose Kit is shown in its storage container at Figure 4. The Vehicle Installation Kit comprises a VCPU, an LSAU, a Vehicle Antenna, all the necessary mounting frames and the associated cables. It is thus apparent, that a vehicle installation requires a General Purpose Kit which would result in an unused PCPU.

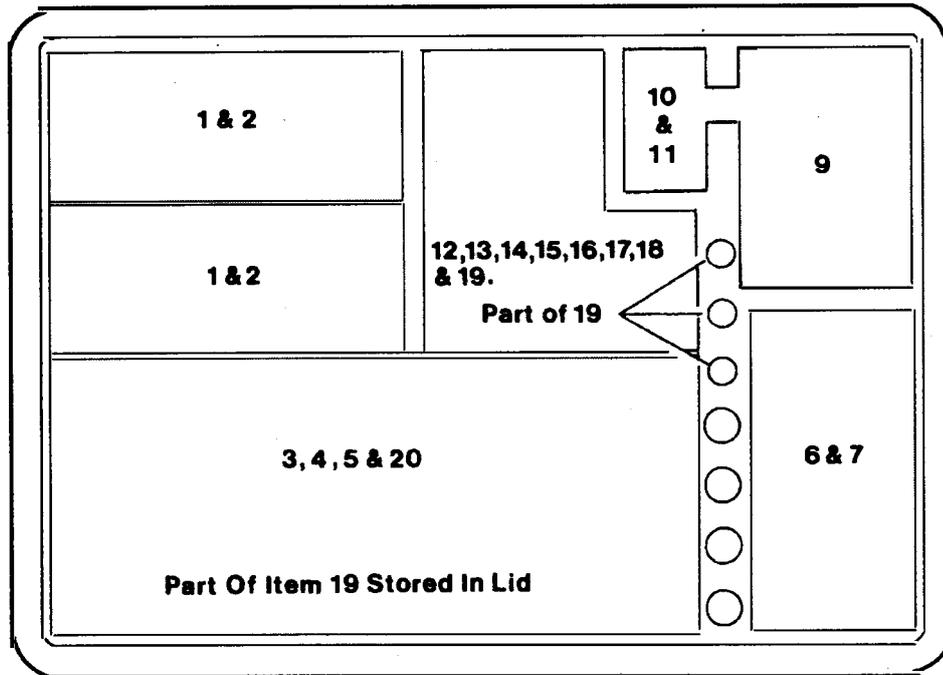


Fig 4 Storage container showing equipment stowage

Item	Qty	Item	Qty
1 Operators Radio Unit (ORU)	2	11 Cassettes C90	3
2 Satchel (ORU)	2	12 Pressel Unit (Special)	2
3 Control Radio Unit (CRU)	1	13 Pressel Unit Clansman	1
4 Portable Control Point Unit (PCPU)	1	14 Handset, General Purpose	1
5 Satchel (CRU/PCPU)	1	15 Handset, Remote, Clansman	1
6 Tape Recorder	1	16 Headset, Microphone, Clansman	1
7 Satchel (Tape Recorder)	1	17 Remote Antenna Feeder	1
8 Antenna AN 862	4	18 Cable Interconnecting Tape Rec/PCPU	1
9 Battery BUB03	16	19 Remote Antenna	1
10 Battery SP11	12	20 Operating Instructions	1

6 Weights and Dimensions

Description	Height		Width		Depth		Weight	
	in	mm	in	mm	in	mm	lb	kg
Operators radio unit	13.7	346	8.6	218	2.0	51.0	6.3	2.8
Control radio unit	12.0	305	11.4	290	4.7	120	13.2	6.0
Vehicle control point unit	12.1	308	10.5	267	3.4	86	6.3	2.8
Portable control point unit	6.5	165	11.5	292	4.3	110	4.7	2.02
Cassette Tape recorder (with batts)	10.4	264	7.3	185	2.6	68	3.6	1.5
Battery BUB03	3.7	94	2.5	64	1.2	31	0.6	0.26
Storage container, empty	26.4	670	16.2	414	15.7	400	34.1	15.5
Storage container fully loaded	-	-	-	-	-	-	-	42.5
Loudspeaker amplifier unit	8.1	206	10.0	255	7.2	185	6.25	2.84

7. PERFORMANCE AND ELECTRICAL DATA

Nominal Parameters:-

- 7.1 Frequency - 430-450 MHz.
- 7.2 Range - 400 metres.
- 7.3 Transmitter Power ORU - 15mW.
CRU - 60mW.
- 7.4 Receiver sensitivity for acceptable signal/noise ratio.
- 7.4.1 ORU - 1 microV.
- 7.4.2 CRU - 2 microV.
- 7.5 Frequency Modulation - 3KHz peak deviation.
- 7.6 Audio output at incident control point, maximum volume- 7mW into 300 ohms.
- 7.7 Microphone sensitivity - 1.5mV 300 ohms source impedance.
- 7.8 Tape Recorder level - 100mV into 1M ohm load.
- 7.9 Battery level indication when voltage drops below 10V.
- 7.9.1 ORU - 1KHz pip tone, 1KHz repetition frequency 1:3 mark/space.
- 7.9.2 PCPU - As ORU but mark/space is 3:1.
- 7.10 Vehicle power consumption - 15W at 12V.

8 General. The equipment is capable of operating out of doors in the climate of NW Europe, given reasonable user protection. It may be subjected to rough treatment and vigorous handling in its operational environment.

9 Climatic Range

9.1 Operational Temperatures

9.1.1 Tape Recorder -5°C to +40°C

9.1.2 Rest of Equipment -25°C to +55°C

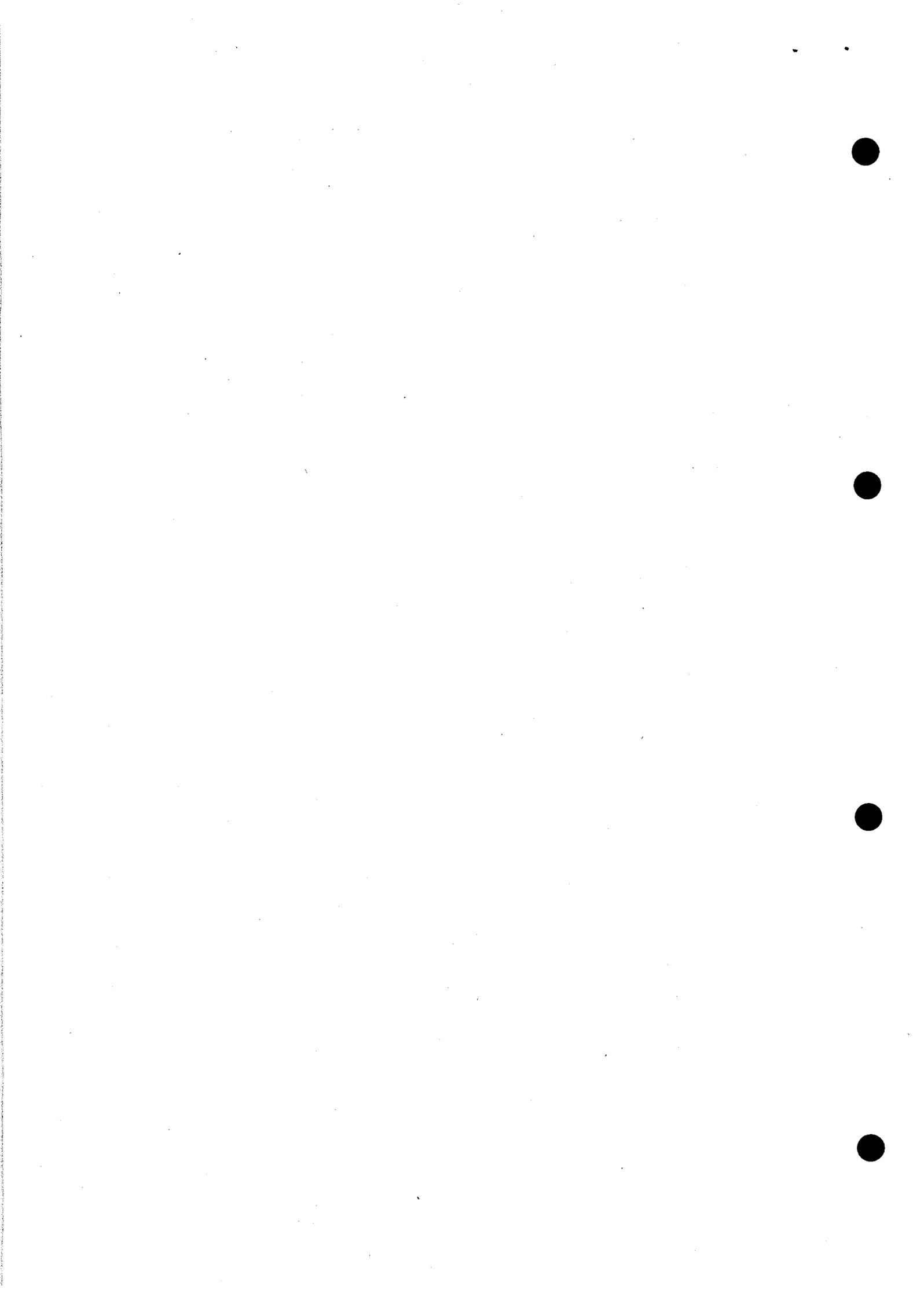
TRANSPORTATION DATA

10 An air transportable storage container (Fig 1) is provided for carriage of the main items of equipment required in both the Vehicle Installation and General Purpose roles. It does not include the VCPU fixed fittings, 5.4m mast and D10 cable. There are however limitations to the air transportability of this equipment and these will be promulgated later.

End of Chapter 1

and

End of Category 101





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